

A PRACTICAL HANDBOOK FOR BEGINNERS

ON

TRACK AND FIELD ATHLETICS

by

GERALD HAMILTON AYERS, B.Sc., M.A.

Coach of the 1932

Indian Olympic Athletics Team

**With a foreword and adaptation for
use in India**

by

E. W. MUMBY, M.A.

Athletic Director and Superintendent of the

College of Physical Education

at

Lucknow Christian College

Lucknow, India.

LUCKNOW PUBLISHING HOUSE,

LUCKNOW, INDIA.

AS

Copyrighted, 1933
by
GERALD HAMILTON AYERS
All rights Reserved.



DEDICATED TO THE
1932 Indian Olympic Athletics Teams
Mervyn Sutton, Captain.
Mehar Chand Dhawan
R. A. Vernieux.

First edition March 1933.

Second edition June 1933.

B
S

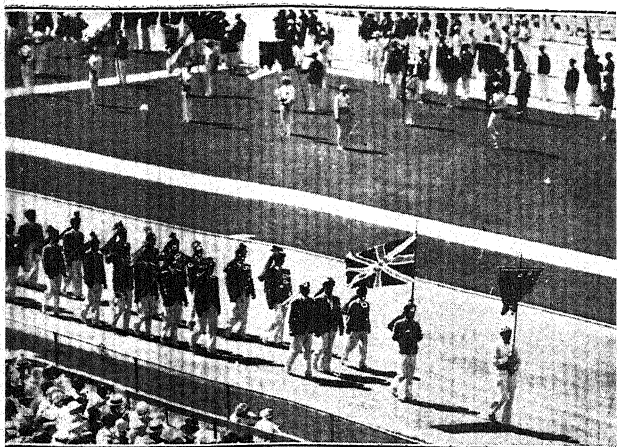


Plate 1.—The 1932 India Olympic Delegation.

This picture was taken during the Parade of Nations at the Opening Ceremony in the Olympic Stadium.

Shah, Captain of the Olympic Champions in Field Hockey, is the flag-bearer. The first row (left to right) includes the President of the Indian Hockey Federation, E. W. Mumby, and trainer of the Indian Olympic Athletics team and J. B. Pata, Assistant Manager of the Hockey Team. Mervyn King, captain of the Track Team, heads the left column of

Foreword

The ancient Greeks made their Olympic Games a national Institution of the highest religious, social and cultural significance. The reason for this emphasis was the fact that they knew that Track and Field Athletics were worthy of time, thought and effort; because through competing the athletes developed strength, graceful bodies and abounding health. The spectators as well as the athletes found the contests a source of great pleasure; while the artist found inspiration in the performance of the graceful bodies.

The value given to the Modern Olympic Games is growing more and more like that given by the ancient Greeks. Students in particular are coming forth to carry India's laurels in the Modern Olympic Games. Along with them are a host of excellent men and women who see for India, the land of the great out-of-doors, the immeasurable good that can come to her people socially, physically and morally through a vast, well conducted and scientifically planned programme for constructive athletics as given in this book.

In India coaches and trainers are exceedingly scarce. This book by Mr. G. H. Ayers, M. A., Track and Field Athletics coach at South Pasadena High School, California, U. S. A. and coach of the 1932 Indian Olympic Athletics Team will be very welcome. It is also a very timely book, because there are many young men

starting some of the newer events such as the pole vault, javelin and discus and Mr. Ayers has very carefully covered them all.

The athlete of many years, as well as the beginner, will find this book just the thing that he has been looking for. Short simple sentences, the use of pictures for illustrations, detailed descriptions of every movement in all events, plus an exhaustive carefully planned week by week training outline makes this book just the thing that the athlete will want with him when he goes to the field.

In the Introduction Mr. Ayers has used the statement "The difference between a champion and an ordinary athlete is his ability to master the details of the form for the event". Having seen Mr. Ayers at work with Mervyn Sutton, the 110 metres High Hurdler from India, I know that he fully believes the above to be true. In a short period of a few weeks Mr. Ayers corrected many of Sutton's faults, and taught him the correct form in a very thorough-going manner. His work with Sutton was amazing.

For athletes who will combine Part I and Part II of the book the results are certain. I wish that this book had been out in India 10 years ago.

E. W. MUMBY, M. A.,
Coach and Manager,
*India's Xth. Olympiad
Athletics Team.*

INTRODUCTION.

The book on track and field events has been written as a result of the need evidenced by the 1932 Olympic Team from India, and as a result of report on track athletics in India made by Mr. E. W. Mumby, Indian Olympic Committeeman.

The instructions are designed for athletes in their first four years of track experience. The forms described are those which produced the best results in the United States from 1922 to 1932. Each chapter of Part I deals with some particular event, giving instructions on the details necessary to make the best form. Sample training schedule for each event will be found in Part II.

The pictures used as illustrations were chosen to give particular suggestions on good and bad features observed in champions. Each picture should be studied in detail, together with the written instructions.

"The difference between a champion and an ordinary athlete is his ability to master the details of the form for the event."

G. H. AYERS.

South Pasadena,
California, U. S. A.

Part I

B

CONTENTS

Part I.

	Page.
Chapter 1.—Sprinting ..	1
Chapter 2.—Middle Distance Running ..	8
Chapter 3.—Distance Running ..	12
Chapter 4.—The Shot Put ..	15
Chapter 5.—Discus Throw ..	19
Chapter 6.—The High Jump ..	23
Chapter 7.—The Pole Vault ..	26
Chapter 8.—The Long Jump ..	27
Chapter 9.—The Hop-Step and Jump ..	34
Chapter 10.—The High Hurdle ..	37
Chapter 11.—The Low Hurdle ..	42
Chapter 12.—Relay Racing ..	44
Chapter 13.—The Javelin Throw ..	49

CHAPTER I—Sprinting.

The Start.

Dig your holes approximately 6" deep and in position so that the knee of the back leg is opposite the ball of the other foot. Be sure that the backs of the holes are perpendicular. At the command, "come to your mark," take a position in the holes so that the thigh (from hip to knee) of the back leg is straight up and down, and so that the hands are directly below the shoulders. At the command "get set," shift the weight forward, moving the shoulders about 6", then raise the body so that the knee of the back leg is about 6" from the ground. Take a deep breath on this command and hold it until after the start. The eyes should be focussed on a point some 10 yards down the lane.

At the command "go," there will be several body actions that need to take place at exactly the same time. The runner will push with both feet against his holes at the same time. (The following description is written for a runner who starts naturally with his right leg as the back leg). Reverse "left" and "right" in the directions for the boy who naturally uses his left leg back. The left arm will swing forward and up with a very violent jerk, while the right arm remains without any

special effort being put into it. As soon as the force of the legs has been used up against the holes the right leg is pushed down to the track with a jabbing motion. The right leg should meet the ground approximately 8" in front of the starting line.

The next five strides should be used in gaining the greatest possible speed disregarding the effort required. The right arm should drive forward with a very definite swing on the 2nd stride. The body lean should be well forward and the feet should jab the track with a hard drive. The rest of the first five strides will see the same type of motion with an exaggerated arm swing and with a gradual erection of the body.

The build-up.

The next phase of the Sprint is that in which the motion of the legs is changed from the hard jabbing drive to one where the knee and thigh are raised rather high and fast on the forward motion. The main effort is changed from driving the foot down to raising the knee fast on each stride. The arm motion changes at the same time from the somewhat jerky movement of the first five strides to a longer swing. The arms continue a hard rapid action, however.

The difference between this "build-up" phase and the "driving" phase at the

beginning of the race is mainly that the leg motion is more of a push and pull combination than merely a push effect. It should be noted here that the knees come higher on the forward swing during the "build-up" than during any other part of the race. The "drive" will account for the first ten yards and the "build-up" form will be used for the next thirty yards. The length of the stride gradually increases from the second stride reaching its greatest length at about the 35 yard mark.

The 100 yards Dash.

Any sprint race for the first forty yards should be run with the same style. No person alive can continue 100 yards putting out the maximum energy required in the first forty yards of the race, as described above, and maintain that rate of speed. This fact was recognized by Charles Paddock when he was establishing numerous world records. Paddock therefore planned his races so as to reach his maximum speed at about the forty yard mark and to continue through the rest of the race merely maintaining that speed.

The "Relaxed or "Coasting" form."

The runner should have reached his maximum speed at the forty yard mark. The problem for the balance of the race is to hold that speed. The speed is maintained by changing the leg action from

a high knee lift to a lower sweep of the knee in the forward stroke with a slightly longer reach of the foot. This may be described as changing from the usual sprinting form to a gliding from. The change is accomplished by forcing the shoulders forward and allowing the arms to take a more relaxed and slightly lower position.

Most sprinters will have difficulty in realizing that they may continue at the same rate of speed with this relaxed position. The amount of effort required will seem greatly lessened than during the "build-up" period. This phase of sprinting is difficult for any runner to learn as it requires perfect mental control over the entire body. Note here the changes in the position of the body, the arms, and the legs in the "start," "build-up," and the last portion of the race are made very gradually and are noticeable only to those persons trained in track work.

The Finish.

Most runners can hold their speed with the relaxed form for about forty to fifty yards. The position of the body will probably have become too erect for efficient sprinting during this time, and there will probably be a slight loss of speed nearing the eighty yard mark. In order to overcome this tendency and to be certain that every ounce of energy is put into the race, a form very much like the "build-up"

portion of the race may be used to good advantage in the last twenty yards.

Changing from the relaxed position back to the "build-up" position, the shoulders are again forced forward, the arms are raised, the knee action is raised, and every ounce of energy is thrown into an effort to reach a higher speed. The change of body position is accomplished gradually, but the energy should be put out with a sudden burst. The intense effort may be continued to the tape providing the runner does not lose his rhythm and form in what is generally known as a "tie up." This fault is merely a loss of control of the muscles. No runner should ever allow himself to lose control of his form so that his muscles "tie up."

The final break for the tape is made in the last stride of the race and is accomplished by throwing the shoulders forward. Plate 2 shows the finish of the 200 metre final race at the Olympic games in Los Angeles. Tolan of United States is shown in his last stride breaking the tape. Notice how far forward his body is leaned contrasted with the other runners, and how he has not jumped from the ground and thrown his hands towards the heavens as many sprinters do.

The 200 yards dash.

The first forty yards of the 220 yard race are run the same as in the 100 yard dash. The relaxed position should be acquired at the forty yard mark as before. The sprinter should gradually let out more energy without change of form at the eighty yard mark. This caution is given to avoid loss of speed which is natural to the relaxed form if the runner is not careful. The relaxed position should be continued to the 175 yard mark. It will take much discipline and practice on the part of the sprinter to hold a fast pace with the relaxed position over such a long distance. A burst of energy should be put on at the 175 yard mark as at the eighty yard mark in the 100 yard dash. It will be physically impossible for most sprinters to carry this burst all the way to the finish tape. It may be possible to continue the burst of energy for about twenty-five yards, so plan to relax as much as possible and yet hold good form for the last twenty yards of the race. It is extremely difficult to realize that the sprinter may relax in the last portion of this race without loss of speed.

Look at Plate 2 again to observe the best illustration of this fact seen in modern sprint racing. Simpson of United States, running in Lane 3, has put on his burst of speed at the 175 yard mark and has practically exhausted himself with some fifteen

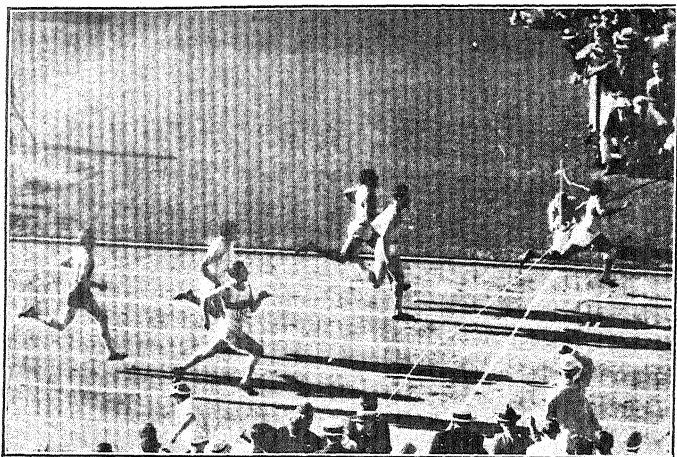


Plate 2.—Finish of the 200 metre Dash-Finals, 1932 Olympics.

Tolan of the United States is the winner with Simpson of the United States, second; Metcalfe of the United States, third; Jonath of Germany, fourth; Berra of the Argentine, fifth; and Walters of South Africa, sixth.

yards left in the race. He, concentrating on holding his form, finished the race relaxed and in second position. Metcalfe of the United States, running in the second lane, put on his burst of speed at the same time as Simpson. He "tied-up" ten yards from the finish when his intense effort caused his loss of form, receiving 3rd place by barely nosing out Jonath of Germany who is in Lane 6. Looking at the picture closely you will see the difference in the body position and muscle tenseness between Metcalfe and either Tolan or Simpson. Notice in the same picture that Jonath is continuing his burst with the tape only five yards away. Berra of the Argentine, running in lane four, and Walters of South Africa, running in lane five, have extended themselves beyond their own ability so that neither has the necessary energy left for the final portion of this race. Berra is maintaining his form with a better style than Walters.

CHAPTER 2

Middle Distance Running.

For the experienced runner the quarter mile race is truly a dash and should be run on the same principle as the 220 yard race. For the beginner it will be better to run this race on the principle of the distance run.

For most racers it will be advisable to use the same "start" and "build-up" as given in Chapter 1 for the sprints. At the forty yard mark a change is made into the relaxed position. The position of the arms should be comparatively low. The body should be leaning forward, the stride should be long and easy. The heel and the ball of the foot are on the same level at the moment of contact with the track. Eastman of United States finishing in 2nd position in the 400 metre Olympic finals as shown by Plate 3 illustrates this form. Close observation of the picture will show no tenseness of the muscles of the legs, arms or shoulders.

It will be a surprise to the inexperienced runner to know that he can maintain a satisfactory rate of speed with a very comfortable relaxed position. The ability to cover ground with least effort, after having built up speed, will determine whether or not a boy will be satisfactory material for distance racing.

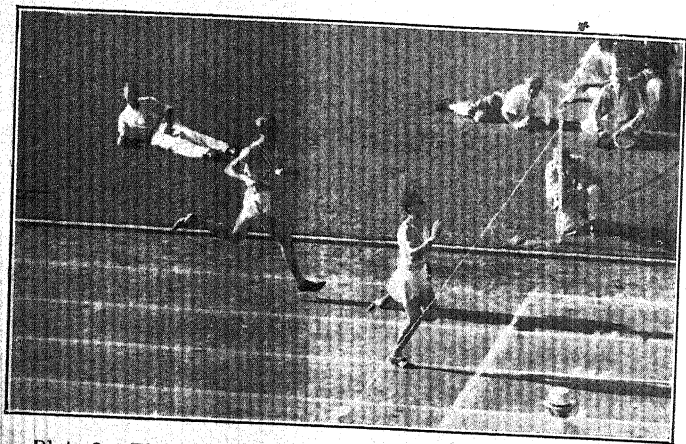


Plate 3 —Finish of the 400 metre Dash-Finals, 1932 Olympics.

Carr of the United States is winning with Eastman of the United States in second place.

Finish of the 440 yard race.

At about the 300 yard mark the runner should move into a position about two strides back of the leader, providing of course the pace has been fast enough during the first half of the race. To secure this position it may be necessary to put out considerable energy at the 300 yard mark. If this has been necessary the runner should plan to relax after the burst of energy. At the 400 yard mark he should put on a sprint similar to the 175 yard position in the 220 yard race. Such a sprint will last 20 yards and the last twenty yards of the race will be run in a relaxed position.

Carr and Eastman of the United States taking first and second place in the 400 metre Olympic finals as shown by Plate 2, ran beautifully timed races and both broke world records for the distance. The picture shows the fine form displayed by both runners at the finish. It was interesting to note that Carr and Eastman seemed much less tired at the close of this race than any other contestant in the race, although they were a full second faster than anyone else.

The half mile run.

The principle set forth in the quarter mile race applies to the half mile run with a very slight modification. The first 300 yards of the race will be run exactly as the quarter mile, only at a slower pace. The relaxed position should be continued through the balance of the first lap, and the first 150 yards of the 2nd lap, when the runner will want to secure a position within ten yards of the leader of the race. The runner should plan for at least 150 yards in the middle of the 2nd lap to run in a relaxed position in order to gather his energy for a final burst.

There are two styles of strategy used in the last 300 yards of this race and a boy should select the style that suits his temperament and ability. First, a burst of speed, and the securing of the lead 200 yards from the finish, is one method for the boy who can run in the lead without being worried by competition. He will secure first position before the final curve, and after securing the lead, will go into a relaxed form maintaining a speed just great enough to hold his lead on the curve. Just before reaching the straightaway he will put on another burst of speed to discourage his opponents who might consider racing on the home stretch. He will finish the race in a relaxed position unless he feels capable of another burst just before the tape. Another method is

to hold a position within easy striking distance of the leader around the last curve, putting on one tremendous spurt at the beginning of the home stretch and planning to make a driving sprint to the tape. A boy should choose the style of finish which fits him best physically and mentally.

Pace.

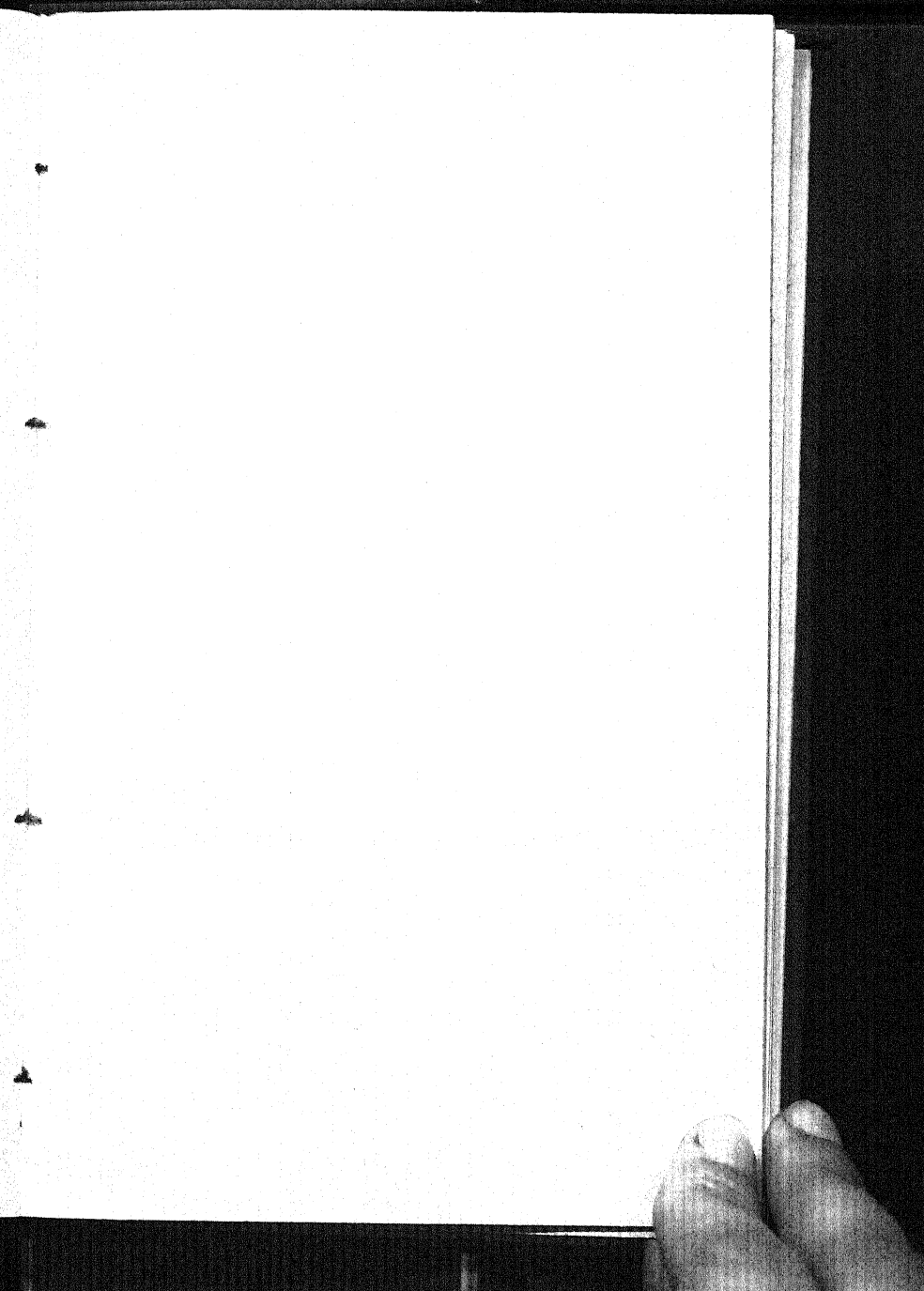
The subject of pace in the 880 yard run is one which the runner and his coach should experiment with to determine the speed at which the runner may take the first lap, considering his ability to run an efficient second lap. Ben Eastman of Stanford, the present world record holder in the 880 yards event when running a 1 min. 52 secs. race will do his first quarter in 53 secs. (Hampson of Great Britain ran a more evenly paced race in winning the Olympic Championship at Los Angeles). For the boy who can do about 2 min. 8 secs. for the distance it is customary in the United States to run the first lap between 60 and 61 seconds.

CHAPTER 3

Distance Running.

Plate 4 shows Lethinen, Finland, 1932 Olympic champion, in the 5,000 metre race leading the field on the back stretch in the third lap. Lethinen is a fine example of the form used by the runners from Finland. Close observation of the picture will bring out the following facts regarding his form:

1. The heel and ball of the foot make contact with the ground at the same time.
2. The knee distinctly leads the forward motion of the leg. This action is very rapid.
3. The lower part of the leg swings forward with a relaxed motion, (In the picture Lethinen has just raised the right knee on the forward motion and is about to swing the lower part of that leg forward.) You will notice that this motion occurs before the left foot has left the ground.
4. The chest is expanded.
5. The arms are kept up and out from the chest, (notice that this is done by two runners from Sweden in 2nd and 3rd positions.)



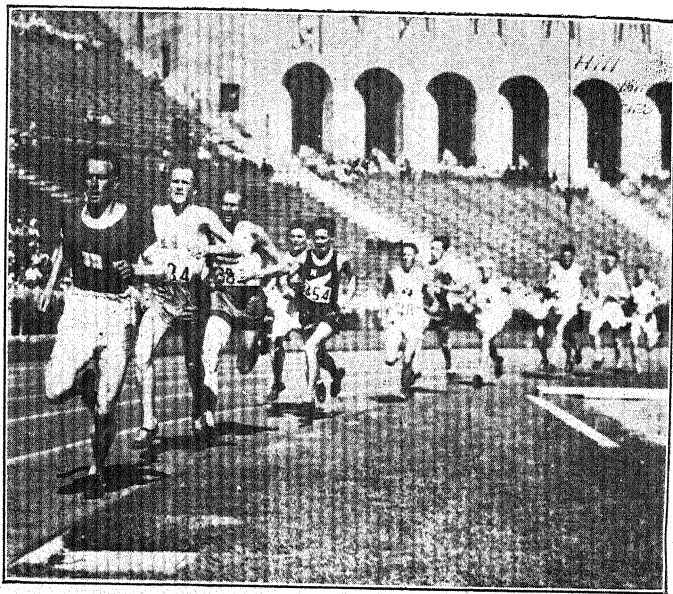


Plate 4.—On the curve of the third lap—5,000 metre Race—1932 Olympics.

Lethinen of Finland is leading, followed by Ny and Petterson of Sweden, with Savidan of New Zealand fourth, Virtinan of Finland fifth, Hillhouse of Australia sixth. Hill of the United States is indicated by the arrow.

6. The shoulders swing just enough to maintain the balance, and the arms swing with them just enough to allow the runner to maintain his poise.

The form as displayed by the Finns differs from that usually seen in the United States. The results obtained by this form are especially noticeable in the fact that the Finns finished their races without visible signs of fatigue. One of the outstanding examples of freshness at the finish during the entire games was Iso-Hollo, Olympic champion in the 3,000 metre steeple-chase.

The arrow in the picture points to Hill of the United States who captured 2nd place in the race. Hill exemplifies the form commonly used in the United States. From the picture you will note that the lower part of the leg and knee springs forward together as shown by Hill's left leg. The runner reaches forward and strikes the track with the ball of the foot, the arms are carried down from the shoulders, the hands swing at about hip height, and the runner is high off the ground during each stride.

In distance running, a uniform pace has been favoured by the best runners of the past twenty years. For example, Kucoskinski of Poland in setting a new record in the 10,000 metre race, during the Olympics varied only $\frac{3}{5}$ of a second in the time

made for the individual laps with the exception of the first and last lap. Nurmi of Finland and Joie Ray, former American distance champion, planned to run with a variation of not more than one second per lap in a race as short as one mile.

A beginning distance runner should experiment with his pace, finding the best speed he can run the distance, and gradually increasing this rate as his ability and experience will permit.

Virtanien of Finland was in 5th position at the moment the picture was taken and he is just beginning the sprint to pass Savidan of New Zealand.



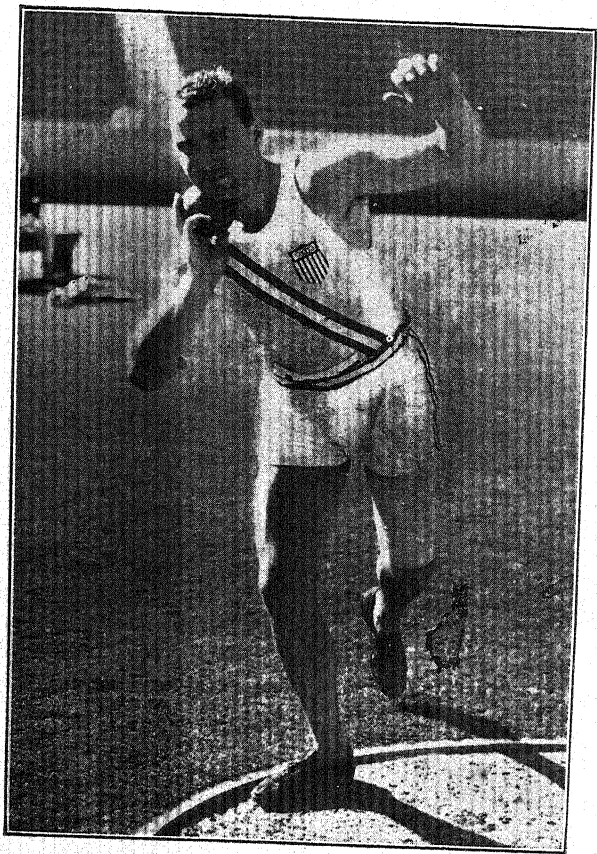


Plate 5.—Sexton of the United States, Olympic
Champion in the Shot Put, at the beginning
of his put.

CHAPTER 4.

The Shot Put.

The shot put and discus throw require far more science and skill than is usually recognized by the ordinary track enthusiast. An athlete, in the shot put, should expect to spend two seasons before he masters the form, and he should expect to be able to improve that form for the next six or seven seasons. Leo Sexton and Harlow Rothert of the United States, winners of first and second places in the 1932 Olympics, reached their greatest heights two years after graduation from their universities.

Plate 5 shows Sexton at the beginning of his put. Note the manner in which the thumb and little finger balance the shot in the hand with the weight of the shot on the upper portion of the hand. Note also that the right elbow is distinctly down from the shoulder. The elbow, in a perfect position, will be directly under the shoulder point. The next movement of Sexton will be to swing the left foot forward across the ring throwing the left shoulder and arm in rhythm with the leg, and giving a forward hop with the right leg. Sexton has his left hand raised too high for the most effective use in the next position.

The Set Position.

The right foot should remain as close to the ground as possible on the hop. The

right foot at the end of the hop will meet the ground just an instant ahead of the left, (almost at the same time.) The right heel will support some weight while the left heel will be off the ground, (a common fault of shot-putters is to land on the right foot, lose all forward speed, then attempt to push the shot,) The right arm, shoulder to elbow should be in a vertical plane, with the trunk of the body bent to the right so that the muscles of the left side are extended and those of the right side contracted as far as possible. This will leave the right shoulder decidedly lower than the left, and the left arm raised to restore the balance. The right knee will have somewhat more bend than the left. The feet will land so that a line drawn from the ball of the right through the ball of the left will extend in the direction the shot will be put. The head should be held as erect as possible. The shot will be lowered to a position about an inch downwards and away from the neck as the weight of the body settles on the feet, as shown in the picture. This is accomplished by lowering the right elbow.

The set position is now established. This position should be reached for an instant on the way from the beginning position shown in the picture to the final delivery. A correct set position is absolutely necessary to a good shot putter. It will be better for those who do not reach a correct

set position to eliminate the hop preparatory to this position. The importance of the correct style at this point cannot be overly stressed.

The Reverse.

The set position is the beginning of the reverse, in which the energy of the athlete is transformed into speed and height of the shot. The reverse is started by raising the shot just past the right ear, at the same time changing the position of the trunk of the body from the right bend to an erect position. Co-ordinated with this change but starting an instant later is a push up and slightly forward with the right leg. The left leg serves as the pivot for the reverse and remains in contact with the ground until after the shot has left the hand, when it leaves the ground with a backward swing. The shot is pushed up and over the head (not past the face as many athletes do). The trunk of the body continues past an erect position to a left-bend stance. When the right leg has imparted all its energy to the put, the right foot will leave the ground and hop to a spot almost where the left foot had been. The body turns through 180 degrees or faces the opposite direction during the reverse. Just as the shot is about to leave the hand the right wrist will be bent backwards. The wrist is snapped back into a normal position and the energy of the

wrist is added just as the shot leaves the hand.

The shot should leave the hand at a 45 degree angle with the ground. The right arm should be extended in the direction of the shot and the eyes should follow the course of the ball. The body balance will be maintained on the right foot by the left leg and the left arm extended backward and the right arm forward with the body trunk leaning in that direction.

Many of the motions described above take place at the same instant, and many of the positions described are only reached for a moment. The motion from the beginning of the put to the conclusion of the reverse should be smooth and rhythmic. The only object of the hop is to gain speed for the ball, and if it fails to do that with maximum efficiency it is not accomplishing its purpose. Experienced athletes have found that they may start the form with a fair degree of relaxation in the muscles, and tighten all the muscles of the body at the set position. The reverse is an explosion of this energy in legs, trunk, arms, shoulders, and wrist with the speed of the hop, all imparted to the shot.

Boys who are beginning to learn the shot-put technique should not be discouraged if they fail to master such a complicated event in a month. Hard work with intelligent study will accomplish the trick.

CHAPTER 5.

The Discus Throw.

Discus throwing is another complicated form in which the athlete imparts to the discus all the energy he can gather whirling, and by use of arms legs and body. The improvement of this event among Athletes in the United States the past ten years has been remarkable as well as in the shot put. The form described in this chapter is one used by many (but not all) leading discus throwers in 1932, best exemplified by Anderson of the United States, Olympic record holder and champion.

The Whirl.

Plate 6 shows Bausch of the United States in a set position on the throw in which he set a new discus record in the decathlon as a part of his establishment of a new Olympic standard for the ten event test. Bausch was formerly a star discus thrower in university competition. To arrive at the position in the picture, Bausch started facing the back of the circle with feet lined up nearly at right angles to his proposed direction of throw. After swinging the arms to secure balance, the left foot is moved 18" to 24" toward the centre of the circle, and at the same time the left shoulder and arm lead the whirl of the body. The body spins on the left foot until it has turned through half a circle,

wrist is added just as the shot leaves the hand.

The shot should leave the hand at a 45 degree angle with the ground. The right arm should be extended in the direction of the shot and the eyes should follow the course of the ball. The body balance will be maintained on the right foot by the left leg and the left arm extended backward and the right arm forward with the body trunk leaning in that direction.

Many of the motions described above take place at the same instant, and many of the positions described are only reached for a moment. The motion from the beginning of the put to the conclusion of the reverse should be smooth and rhythmic. The only object of the hop is to gain speed for the ball, and if it fails to do that with maximum efficiency it is not accomplishing its purpose. Experienced athletes have found that they may start the form with a fair degree of relaxation in the muscles, and tighten all the muscles of the body at the set position. The reverse is an explosion of this energy in legs, trunk, arms, shoulders, and wrist with the speed of the hop, all imparted to the shot.

Boys who are beginning to learn the shot-put technique should not be discouraged if they fail to master such a complicated event in a month. Hard work with intelligent study will accomplish the trick.

CHAPTER 5.

The Discus Throw.

Discus throwing is another complicated form in which the athlete imparts to the discus all the energy he can gather whirling, and by use of arms legs and body. The improvement of this event among Athletes in the United States the past ten years has been remarkable as well as in the shot put. The form described in this chapter is one used by many (but not all) leading discus throwers in 1932, best exemplified by Anderson of the United States, Olympic record holder and champion.

The Whirl.

Plate 6 shows Bausch of the United States in a set position on the throw in which he set a new discus record in the decathlon as a part of his establishment of a new Olympic standard for the ten event test. Bausch was formerly a star discus thrower in university competition. To arrive at the position in the picture, Bausch started facing the back of the circle with feet lined up nearly at right angles to his proposed direction of throw. After swinging the arms to secure balance, the left foot is moved 18" to 24" toward the centre of the circle, and at the same time the left shoulder and arm lead the whirl of the body. The body spins on the left foot until it has turned through half a circle,

when the right foot is placed on the ground and the weight transferred to that foot. The spin continues on the right foot through another half circle when the left foot is placed on the ground. The diagram shows the correct foot position.

Note:—That all foot marks are in a straight line and on a diameter of the discus ring. This is the position shown in the picture, and is the *Set Position* for the discus throw.

The Set Position.

The picture illustrates many desirable features of a good set position. Note that the feet are planted solidly on the ground, the right knee has a good bend with the left somewhat less. The crotch is over a point half way between the feet. The body is twisted to the right with the muscles of the trunk tightened. The left arm is kept shoulder high. The right arm is completely back as far as it will go. This position will serve as the beginning of the reverse as it did in the shot put. All muscles should be tightened or set at this instant.

The Reverse.

The reverse is started by a pull of the discus together with a push forward of the right shoulder. This is followed immediately by a twisting of the muscles of the trunk to the left, a straightening out of the right leg, a pushing of the left leg backward. The pull of the discus con-

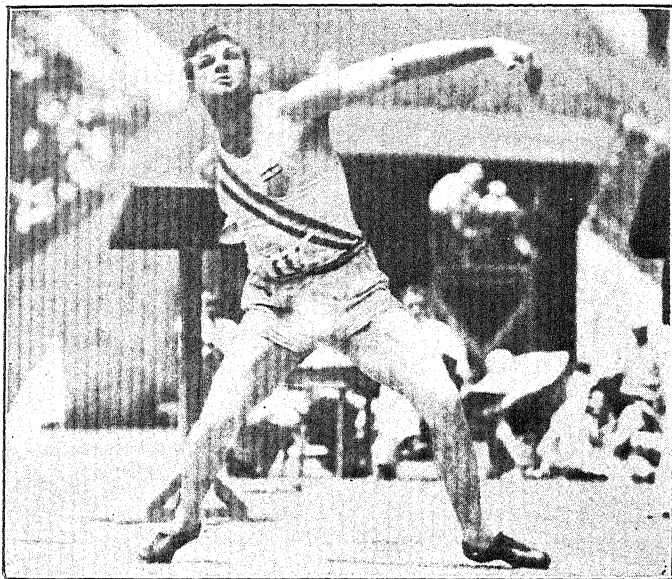


Plate 6.—Bausch of the United States. Olympic decathlon champion, in the set position for the discus throw.



tinues. When these movements are co-ordinated, the body will be turned to the left through half a circle so violently that the feet will leave the ground, and the right foot will come into position in approximately the same spot where the left foot had been. The right hand will hold the discus until it is in the same line as the body was in advancing across the ring. The arm should speed up materially in the last 4 feet prior to releasing the discus. The final release is made over the forefinger, and the discus whirls in a clockwise manner in the air. The release is accompanied by a quick pull of the hand to the left (mainly a wrist motion). It is advisable to continue this snap through to a place where the right elbow has a decided bend to it. Balance is maintained after the reverse exactly as in the shot put.

Notes:

The discus is properly gripped when the first three fingers have a good grip on the rim. The discus is released without releasing the tenseness in the finger. A healthy callous is developed by all discus throwers on their fore finger.

Stanford University discus throwers assume a set position in which the knees are bent much more than in Plate 6 and the discus is not so far back but much closer to the ground. Krenz of Stanford, former world's record holder, started his reverse

with the discus within 9" of the ground. He could consistently better 150 feet without the use of a whirl.

The sole reason for the whirl is to develop centrifugal force due to the discus revolving with the arm extended. It is essential that the thrower has perfect control in the whirl, otherwise the whirl becomes useless in the reverse. A correct set position is as essential in the discus throw as in the shot put. The centrifugal force is coordinated with the energy of the legs, trunk, arms and wrist to add speed and height to the "platter."

Long practice and constant study make discus throwers. Do not expect to reach your maximum in less than five years of practice.

CHAPTER 6.

The High Jump.

Forms in high jumping among American athletes have changed as styles in dress with Parisian women. Many extreme forms have been proposed during the past ten years. Harold Osborne, 1924 Olympic champion was the forerunner of the present modification. Throughout the change in forms, the author has developed a new style which is known in Southern California as the "Ayers form." The form will be explained in detail because of its newness and for the purpose of this explanation, the jumper will be one who springs from his left foot.

The jumper approaches the bar from the left, at an angle approximately 45 degrees. The take off mark will be some 20" in front of the bar (considerably closer than in other forms). The jumper will approach the bar with an easy run, striking the take off mark with his left foot in regular stride. The left foot will strike the ground solidly, ball and heel together, and the right leg will swing forward as though another step were to follow. The right knee however, is raised as high as possible with a strong lift. The knee should reach the level of the chin, and at the same time the right foot will kick as high as the jumper can force it.

While the right leg is being raised, the weight of the body is raised upward by lifting the shoulders and throwing both arms upward. The left leg and foot add

the total of their spring to the upward lift. A slight twist of the body to the left off the left foot at the moment of the spring is necessary to prevent an illegal jump. The entire motion so far will leave the body with an upward movement. It is important that this upward sweep be allowed to reach its greatest height. The instant the right foot reaches its highest point, it is forced over the bar and the right arm is pushed up and to the left. The left arm will describe the proper motions if no attention is paid to it. By this time the body will be nearly horizontal and will be attaining a face down position. The left leg may be allowed to follow its natural inclinations until the body is nearly face downwards, when the left foot with a violent jerk is kicked backwards. (This will be toward the sky at this instant). The kick must be strong enough so that the left knee reaches a height equal to the left hip joint.

An easy position may be maintained on the down sweep from the bar if a slight down push is applied to the right foot at the same time the up-kick is given to the left foot. The right hand should reach downward at same time. The body will fall either face downward or slightly on the right side.

Notes.

The important items in this form are:
(1) a high, sweeping kick of the right foot,

(2) a high and somewhat violent lift of the shoulders, (3) careful timing in the beginning of the turn-over at the bar (most jumpers attempt to turn over too quickly); (4) hard upward kick of the left foot properly timed. When the form is executed perfectly, the body will be face downward at the moment of crossing, and the bar will be exactly under the centre line of the trunk of the body.

High-kicking should be practiced until it is easy to kick at least a foot above head height. The head must be kept higher than the hips until the jumper has cleared the bar. This may be accomplished by turning the head to the left and throwing the left arm backward following the up-kick of the left leg.

Perfect performance should allow the jumper to reach a height equal to the height of the right knee on its upward sweep. The form is by far the most economical yet proposed in terms of the amount of energy that must be used in the spring from the ground.

McNaughton of Canada, in winning the 1932 Olympic championship, used a form which approached the "Ayers' form." McNaughton's superiority over Van Osdel of the United States came when they were forced into a two hour jump-off for the title. Van Osdel's form required a great deal more energy per jump than did McNaughton's.

CHAPTER 7.

Pole Vault.

The pole vault is the most technical and probably the most difficult of the jumping events, and, like the shot put and discus throw, requires years of practice before a nearly perfect form is reached.

The run.

The approach or run is more important than is usually realized in vaulting, and no vaulter should expect to achieve a good height until he has standardized his run. The take-off mark for the vault will be directly below the hand hold on the pole when the arms are extended above the head and the pole is in the vaulting box. The run should be 50 to 70 feet and the step should be so perfect that the vaulter can hit the take off mark if he comes down the runway with his eyes closed. The pole is carried at the right side in the run. Four strides from the take off, the point of the pole is lowered slightly as the beginning action of the vault. The pole is jabbed into the vaulting box grasped firmly by the right hand, while the left is allowed to slide up the pole nearly as far as the right hand. The pole will be directly over the head just after contact with the box, with the arms extended slightly less than full length. In rhythm with and directly after the jab of the pole, the right

knee should be raised nearly as high as the shoulder followed immediately with a swing of the right foot nearly to a vertical position. Co-ordinated with the right knee lift is a definite spring or push off the left foot. After this leg springs from the ground it swings around the pole catching up in position with the right leg.

The Pull-up and Hand-Stand.

As soon as the feet have left the ground completely, the arms will pull hard on the pole. The pole will be approaching an erect position at the time of the pull with the body swinging from a normal position to an upside down arrangement on very much the same idea as a clock pendulum with hand position as the pivot. The pull up continues as the feet gain height, As the body turns around, the pull up changes naturally into a push-up from the pole. The last portion of the push-up is the same body action as in the hand stand on the floor.

The Jack-Knife and Drop.

The action so far leaves the pole in a vertical position and body in a position as shown by Plate 7. The vaulter in this picture is Nishida of Japan, second place winner in the Olympic Games at Los Angeles. In the writer's opinion, Nishida had the finest vaulting form displayed at the Games. His only fault is illustrated in

the picture. Note that the pole has not yet reached a vertical position, but Nishida has crossed the bar with his legs, hips and half the trunk of the body and he has released his hand hold. He knocked the bar off on this trial, 14' 1", with his chest.

After the body has reached its height the legs are allowed to drop first, causing a bending at the hips and giving the vaulter the same position as in a jack-knife in diving. After the feet have started downward and the arms have done all they can in the hand-stand, the hands should be jerked rapidly away from the pole and snapped up and back. This removes the chance of the elbows hitting the bar, as well as helping the body gain an erect position. Had Nishida dropped his feet a bit faster and held his pole a bit longer his jack-knife position would have been somewhat improved.

Most young vaulters have an inclination to hurry their vaulting at the following points:—

1. In the spring at the take off.
2. Too rapid pull in the pull-up.
3. Feet dropped too quickly, before greatest height is reached.
4. Letting go of the pole too soon.

Long hard work on running with the pole, on the acrobatic stunts of the gymnasium and on practice for perfect form at a

low height is the way champion vaulters are made. The United States now has dozens of College athletes capable of 13'6", all of whom started vaulting when they entered high school.

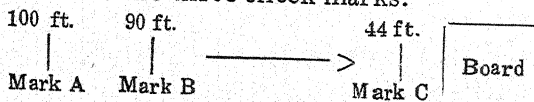
CHAPTER 8.

The Long Jump.

Correct form in the long jump will allow for the best combination of running speed and ability to spring from the ground. Little real advance in this event had been made until 1924 but since that time the number of 25 foot jumpers has increased remarkably. Plate 8 shows Gordon of the United States, winner of the 1932 Olympic Championship.

The Run.

The run before the take-off in the long jump is very important and an item which most beginning jumpers give too little attention. The run should be just long enough to allow the jumper to reach his maximum speed at the take-off board. A scheme of 3 check marks is often used to insure correct step and correct distance in the run. The Diagram illustrates the approximate distance from the take-off board of the three check marks:



Mark C is set 4 strides from the take-off board. For most jumpers, running at top speed this mark will be at a distance of about 24 feet. Mark B is set far enough from the board to allow the jumper to

reach his highest speed. For most jumpers this distance will be about 90 feet from board, but each jumper should experiment with the distance until he finds the place which yields the best result for him. Mark A is placed about 10 feet back of Mark B. The jumper starts at Mark A, builds up his speed in the same manner a sprinter does, checks his step at Mark B; continues to increase his speed: checks his step at Mark C; and hits the take-off board with the correct foot on every trial.

The Take-Off.

The take-off from the board is the time at which speed and spring are combined, and as a result many motions take place at the same instant. The directions following will be for a jumper who uses his left leg and his "jumping leg."

The left foot should make contact with the board, heel and ball of the foot together, and with the weight of the body directly over the foot. As the right foot swings forward from the last stride, the right knee is brought forward with a rapid motion and raised as high as the jumper can force it. In rhythm with the knee lift, the arms are thrown upward and forward, the shoulders are raised upward; the left leg imparts its utmost in spring with the left foot leaving the board only after the entire body has started its upward and forward progress.

Correct form requires such a violent uplift of arms and shoulders that at the moment of spring the weight of the trunk of the body is taken off the legs, and a smooth rhythmic change is made from running to jumping. The body should not bend at the hip joints, but should retain a nearly vertical position.

In the air and Landing.

The motion of the legs continues in the air, and the arms are so moved as to maintain balance. The knee of the left leg will be raised to a height equal to the right knee. The legs will give the appearance of running in the air. When the body starts to come down, the chest should be forced forward and the arms thrown upward. This action will keep the body from doubling-up at the hip joints. The landing may be made with one foot touching the ground ahead of the other, or with the feet together. The first form should result in better balance at the landing.

In the picture, Gordon has reached his greatest height (some 18 feet from the board). Notice that his hands are well above his head; his body is erect from hips to shoulders; his knees are high and the feet are in stride as in running. Many jumpers in this position have both feet together and reaching forward, with their shoulders slightly above their hip level. To be a

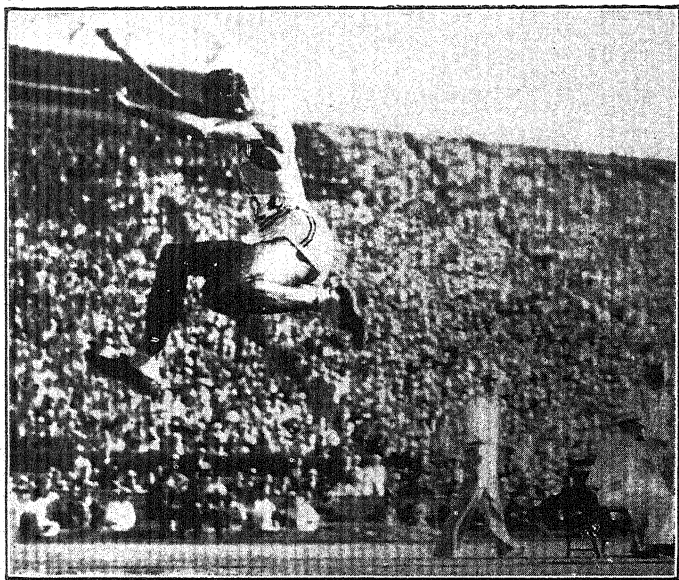


Plate 8.—Gordon of the United States, Olympic champion
in the long jump.

good jumper, practice for smoothness and ease while jumping

Note:

Reverse "left" and "right" in the directions for those jumpers who use their right leg as the "jumping leg."

CHAPTER 9.

The Hop Step and Jump.

The hop step and jump has many actions nearly identical with the long jump. The run and the manner of checking the step is the same for both events.

The Take-Off.

The take-off is like that in the long jump excepting the left arm will go higher than the right. The change in arm action is for the purpose of balancing the body for securing a better position for the step.

The Hop.

As soon as the right knee reaches its highest position following the take-off it is allowed to drop downward. The right foot will be in a position similar to that of Gordon's left foot in Plate 8. The left arm swings down with the right knee. In the latter part of the hop, the right knee, right foot and left arm started forward with a hard swing. The left leg describes a motion following the take-off merely to balance the body.

The hop is completed by landing on the left foot, ball and heel together, and with the body erect and directly over the left foot.

The Step.

The step is made by completing the forward swing of the right leg and left arm,



Plate 9.—Nambu of Japan. Olympic champion and world's record holder in the Hop-Step and Jump.

and so timing it with the landing on the left foot that little forward speed is lost. The left leg and foot impart their spring and forward push to the step just as the left foot leaves the ground. The shoulders at this instant will be well in advance of the left foot. In other words the body maintains a definite forward lean at the time of the take-off for the step. At the end of the step the right arm should be down and back, the left arm about shoulder height and forward.

The Jump.

The jump is made from the right foot with the same principles applying as though this were a single long jump. The arms are thrown upward and forward, having come together in the swing forward. The left knee is raised as high as possible, and is driven forward with a hard jerk. The shoulders and trunk of the body raise upward with the arm swing. The right knee will be raised to the position of the left in the jump. Most jumpers will find it advantageous to reach toward the heavens with the arms to insure correct body position.

The landing will be made as in the long jump but with the feet nearly together.

Plate 9 shows Nambu of Japan, in a practice jump. Nambu was the former world's record holder in the long jump,

and at the 1932 Olympic Games in Los Angeles won the championship in the hop, step, and jump setting a new world's record of 51'-7".

Note:—Reverse "left" and "right" in the directions for those jumpers who use their right foot at the take-off board.

CHAPTER 10.

The High Hurdles.

Here is an event for the tall boy who is not quite fast enough to compete in a company of sprinters nor with quite enough spring to enable him to high jump. But the boy who wishes to be a good high hurdler must be willing to work long and hard. The start of a hurdle race is like that of the 100 yard dash for the first 15 yards, with the exception that some hurdlers will find it necessary to stretch their stride somewhat more in this race than they would in sprinting. If the runner will start with the same foot back in his mark as he uses foremost to go over his hurdle, his step for the first hurdle will come out correctly. That is, if a hurdler naturally favors going over a hurdle with his right foot first, he will use his right foot back when at the start marks. The directions given hereafter will be for the boy who uses his right foot first in hurdling.

The Approach and Take-Off.

As the runner approaches the hurdle, he must keep his body leaned forward as much or slightly more than he would in sprinting. The take-off for the first hurdle will be made from the left foot, and the motions that follow will be as though the

runner were attempting a high, long stride with the right leg. The left arm will drive forward just before the take-off with a shove so hard that the effort will be felt in the left shoulder. The body will be leaned forward at the same time with a motion that will seem as though the runner were trying to push his head and shoulders far ahead of their normal position. The right leg will be kicked forward and up so that he just clears the hurdle. The left hand and right foot will reach hurdle height, 3' 6", just before they reach the hurdle. The left leg will be pulled from the ground with a sharp movement, the left knee reaching the crotch height. This means that at one position the thigh will be exactly horizontal and pointing directly to the left. The right arm will be kept in normal swing, being back of the body when the left arm is extended to the front. The head will have raised slightly higher than in normal sprinting during this time. The upper left picture of plate 10 shows the take-off.

The hurdle and Landing.

The action so far has been to advance and raise the body to hurdle height using full advantage of the legs in clearing the obstacle, raising the trunk of the body as little as possible. The instant the left hand and right foot cross the hurdle they will be snapped down violently. The upper

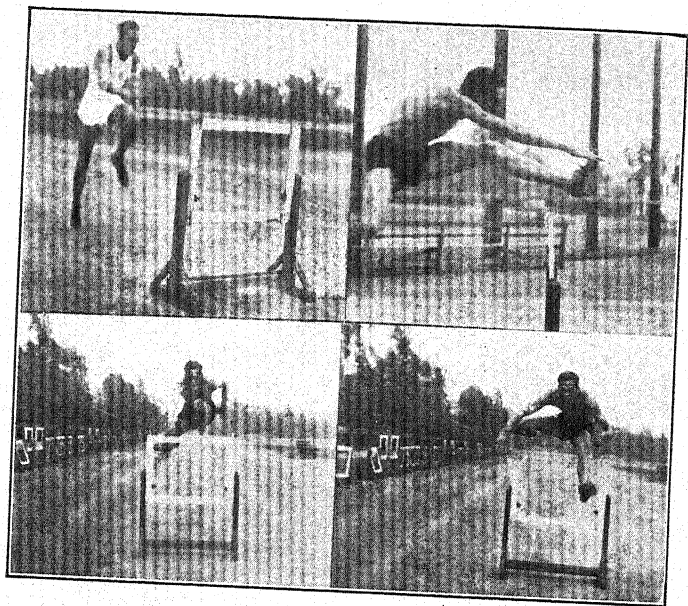


Plate 10.—Lyon, one of Coach Ayers' proteges in the high hurdles, illustrates the approach and proper form over the hurdle.

right picture in Plate 10 shows this position. The object is to get the right foot on the ground as fast as the hurdler can place it there. The left arm will be drawn to the left as it is forced down allowing enough bend at the elbow so that the left knee will pass without contact. The left knee is jerked into position over the hurdle so that it is directly to the left of the body and at the height of the crotch. The lower right picture in Plate 10 shows fine leg position. The knee is then started down as it advances past the hurdle, but the speed of the foot will be considerably greater than that of the knee on the downward sweep. The right arm moves forward with the left leg. The right foot should reach the ground within 4 feet of the hurdle. The lower left picture in Plate 10 shows excellent position for the arms.

Between the Hurdles.

Neither arm nor leg should stop its directed motion even for an instant throughout the hurdle clearance. The same shall be true as the hurdler lands on the ball of his right foot, body leaned well forward, and drives the left leg into the next stride. Three steps will be used between the hurdles and the runner will have but one object, covering this distance as rapidly as he can. The form over the following nine hurdles will be the same as that used over the first hurdle.

The Finish.

The last fifteen yards of the hurdle race are often poorly run. The runner should concentrate on driving arms and legs at top speed during this distance. The form will be very similar to the "build-up" described in the chapter on Sprinting. The manner of breaking the tape will be the same form as that in the "Finish" described in Chapter 1.

Notes:

Never attempt to hurdle until you have properly loosened the muscles by running, kicking and stretching. Observe this procedure during training sessions and before races.

The take-off from the left should be made from the ball of the foot and not with the foot planted flat on the track.

Most hurdlers start the down motion of the left arm and right foot too late. Practice a fast motion at this point during training.

Special exercises will be needed to develop sufficient leg spread, body limberness and fast snap-down of the right leg.

At the moment the right foot is directly above the hurdle, the hurdler should force his right foot into the correct position by pointing the toes of that foot downward, thus putting a tension in the muscles of the foot and leg.

Practice on the techniques in this order: left arm, right leg, left leg, body lean, right leg snap down, body position, right arm.

The body will have no tendency to twist to right or left in a perfect form. The right arm motion will be difficult to learn and few hurdlers with less than two years experience should attempt to perfect its motion.

Beginning hurdlers make a mental job running to each hurdle as though each barrier were the objective. Always concentrate mentally on running beyond the hurdle. Remember the race ends at the finish tape.

The perfection of small details, which comes only with long, intelligent work, will work, will make a superior hurdler of any boy with normal ability. Captain Mervyn Sutton of the 1932 Indian Olympic team is a fine example of what hard work will accomplish, if the work is done under direction of a competent coach.

Directions given above are for hurdlers using the right foot first over the hurdle, while the pictures in Plate 10 are those of hurdler using his left foot first. Use the foot forward which seems the more natural to you.

CHAPTER 11

The Low Hurdles.

Each low hurdler should carefully read Chapter 10 which deals with the High Hurdles. He should study the form explained in that chapter in detail for the basic principles of good form in the two hurdle events are the same. The low hurdles require the runner to be a sprinter, capable of running the 220 yard sprint race in two seconds faster than he will be required to run the hurdle race. The objective of good form in the low hurdles is to allow the runner to stride over the barrier and to continue with the least loss of speed or time.

The Take-off.

The directions given hereafter will be for the hurdler who uses his right foot first in clearing the hurdle. The take-off will be from the ball of the left foot in full running stride. The left arm and right foot will be driven forward as rapidly as the hurdler can force them, but only to hurdle height (2'6"). The left leg will be jerked forward with the knee raised, but only high enough to allow clearance for the hurdle. The lean of the body will be the same as in sprinting.

The Hurdle and Landing.

The motion over the hurdle is very similar to that described for the high hurdles,

but is somewhat more rapid, due to the lower height to which the legs have to be raised. The right foot should be snapped to the track making contact within three feet of the hurdle. The left leg can be carried over the hurdle and forward so rapidly that the body lean will be kept correct, and the runner will actually feel as though he were increasing speed at this point in the race.

Between the Hurdles.

The twenty yards between hurdles should be covered in seven steps. Considerable training will need to be done to get the steps between the hurdles perfect. When the step is perfect, and the form likewise, the low hurdles should be cleared so rapidly that an untrained observer will be unable to see the action of the legs, and arms.

The Finish.

As stated above, the low hurdles are primarily a sprint race, and the runner should put his attention to reaching the finish tape. The form for the finish is that described in Chapter 1 on Sprinting.

CHAPTER 12

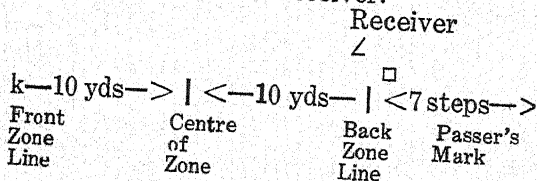
Relay Racing.

Relay racing is similar to running a regular race over the same distance excepting the start and finish of each lap, where the art of the baton must be learned. Many forms of baton passing are in use throughout the world. The author has selected one type to be used in sprint relays and one type to be used in distance relays.

Sprint Relays—the Pass.

The responsibility for a good exchange of the baton in the sprint relays is divided between the passer and the receiver. Because of this divided responsibility considerable practice is needed to develop the perfect timing required between passer and receiver. The description of what each runner does is divided into two parts.

The receiver takes a position at the back of the 20 yard zone, body turned a quarter turn to the right and the head another quarter turn so that he may see his teammate approaching. The receiver will make a mark on the track from the back zone mark. The diagram shows the position of the marks and the receiver.



The receiver extends his right hand toward the passer. When the passer reaches the passer's mark, the receiver will turn to the left and start running at a slow pace. The right arm will be extended backward and down from the shoulder at a 45 degree angle. The hand should be held with the fingers together, thumb spread and the opening so formed pointed directly downward. The arm must be held rigid as the receiver gains speed. At the moment of contact of the baton with the right hand, the hand must close on the stick firmly, jerk it forward to position in front of the body where the left hand will grasp the baton just below the right hand. The transfer from right to left hand is made directly in front of the body.

The passer carries the baton in his left hand allowing it to swing with the normal swing of the arms until within two strides of the receiver. The left arm is then extended forward and the baton is placed just below the opening formed by the right hand of the receiver. The baton is forced upward into the opening and against the hand by a motion of the left wrist of the passer. The receiver grasps the baton and jerks it away as described in the preceding paragraph and the passer's duty is finished.

A perfect pass is obtained when the passer continues his run at top speed, the receiver reaching the same speed at the

moment of the exchange. The passer with his left hand extended will be able to reach within two inches of the receiver's hand during the exchange. The pass must take place within the 20 yard zone shown in the diagram.

Notes.

The passer and receiver must try out various passer's marks to determine which best fits their individual speeds. The seven step distance is given as the distance most likely to fit the average runners.

The passer must be careful not to slow down to get in time with the receiver just before the exchange. He must continue at full speed and force the receiver to adjust his speed to the faster rate. The passer can help in the timing if he will call to the receiver to "go" or to "slow up" when about 3 strides away as he judges their relative speeds.

The passer must learn to poise the baton an instant just before forcing it against the receiver's hand to insure proper position. Remember it is the passer's responsibility to get the baton in the proper position in the receiver's hand.

The passer may not leave his lane until all teams have exchanged their batons. Practice staying in your own lane after passing the baton.

The receiver is responsible for getting started at the right time and increasing

his pace so that the exchange is made at top speed. He is the one to judge where the passer's mark shall be and to standardize his start so that his increase of speed shall be uniform.

The receiver is responsible for helping the passer locate his position on the track. Calling to his team mate or the wearing of a bright colored ribbon on the right wrist may serve as aids.

The receiver is responsible for holding his right arm and hand rigid from the time he leaves the Back Zone Mark until the baton is exchanged. He is also responsible for the protection of the baton from the time he takes it from the passer until he passes to another team-mate. Be sure that you have a good grasp on the baton before jerking the arm too rapidly.

The passer should plan to run in the right half of his lane just before the pass and the receiver in the left half of the lane.

Distance Relays—the Pass.

Since a distance runner is generally tired at the close of his race, a different style of exchange of the baton has been developed. Sole responsibility with the exception of one movement rests with the receiver. The only position the passer is responsible for is the position at the finish of his race when he shall hold the baton in his left hand, extended full length and the baton held vertically.

The receiver faces the passer as in the sprint form. As the passer approaches, he judges his team mate's speed and moves away accordingly. The receiver keeps looking at the baton however, until the receiver is close enough to allow him to grasp the stick and jerk it from the passer's hands. With this motion he turns forward in his lane, and makes the change from right to left hand as in the sprint-pass case. Here the receiver is responsible for getting the baton away from the passer.

The sprint form should be employed where the individual runners race a distance up to the quarter mile each. The second form should be employed when the racing distance is a quarter mile or greater.

Notes.

No passer's mark is used in the distance-pass form.

All responsibility for pace is with the receiver.

If the passer is finishing strong, the receiver should judge his movement so that the exchange will take place near the Front Zone Mark; but if the passer is obviously tired and slow the exchange should be made near the Back Zone Mark.

In the long relay races baton passing is not important and little energy should be expended in perfecting the pass, but in sprint races the opposite is true.

CHAPTER 13.

The Javelin Throw.

While Finland and Sweden have been dominating the javelin throw in recent Olympic competitions, the United States has been constantly improving its men in this event. Finnish throwers use a form which differs radically from the American style. M. Jarvinen of Finland won the 1932 Olympic Championship with apparent ease.

The Finnish Form.

Jarvinen uses a total run of about 75 feet. He approaches the throwing line at half speed and with the javelin carried about head high and parallel with the direction of the run. At a distance back from the throw line great enough to allow for stopping, a hop is made, right foot to right foot. During the hop the right arm is extended backwards nearly full length; the trunk of the body is bent backwards; the left arm raised; and the weight so shifted that it will be back of the right foot when it completes the hop. When the right foot hits the ground the weight is shifted forward; the right arm starts the throw of the javelin; the left arm starts downward and backward. The left foot hits the ground shortly after the right. The actions described above are continued

until the javelin is actually thrown. The throw is completed by reversing the position of the feet. This is done by hopping forward slightly (that is just ahead of the former left foot position) with the right foot while the left foot swings backward off the ground. This type of reverse is explained in Chapter 4 on the Shot Put. Balance should be maintained on the right foot.

The American Form.

The American form requires a slightly longer run. The javelin is carried in the right hand, arm extended full length to the rear and downward. A run of $\frac{3}{4}$ speed is used. Preparatory to the throw a cross step is done as follows: The left foot is placed in front and to the right of the right foot (this occurs in the regular left leg stride). The right foot swings back of the left and is placed pointing to the right of the direction of the run (90 degrees from former position). The body is turned 90 degrees to the right, the left foot is placed at a wide stance from the right and parallel to it. By the cross-step the body is placed at right angles to its former position with a slight loss of speed. The javelin is kept parallel to the run, and crosses the chest after the cross-step. The knees should be bent noticeably and the weight of the body should be equally distributed between the two feet. The

throw is made by snapping the arm forward much in the same manner as in throwing a ball, at the same time turning the body to the left while executing the Reverse in the javelin throw as in the Shot Put.

Your Form.

Choose the form that seems to fit your natural abilities the better, and perfect it. The throw of the javelin is a violent snap in either form and a javelin thrower should give the strain on the throwing arm, particularly at the elbow joint, serious consideration when choosing a form.

Part II



CONTENTS

PART II

	Page
Training Programmes	57
Synopsis of Weekly Training:—	
100 yards Dash	61
220 yards Dash	64
440 yards Run	66
Half Mile Run	69
The Mile Run	72
The Shot Put	74
The Discus Throw	77
The High Jump	80
The Pole Vault	83
The Long Jump	86
The Hop Step and Jump	89
The High Hurdles	92
The Low Hurdles	95
The Javelin Throw	98
Training Notes	101



TRAINING PROGRAMMES

Part 1 of this book has been devoted to directions concerning the desirable forms to be used in the various events on the track and field. The preceding chapters have been statements of what to do and how to do it. This part is devoted to telling when and how much to do.

It would not be possible in the limited spaces of this book to give full training programmes for each event and covering a period of twelve weeks. The training programme for any event will vary from week to week. With these facts in mind, the second, fifth, and eighth weeks of training have been selected as the sample periods for which detailed instructions of each day's work will be given. The first week of training in any event should be devoted mainly to conditioning the muscles of the athlete. Light work may be given with special attention to keep the athlete from over-doing during this week, Harm is more liable to be done by over-working during the first week than by under-working.

The third and Fourth weeks of training should be slightly more strenuous than the second week. The fourth week the athlete should be allowed to try for his best performance in his favorite event. The sixth and seventh weeks should range in intensity between the fifth and eighth according to the condition of the athlete.

Frequent reference is made to chapters of part 1. If one is interested in the training programme for a 100 yards dash man, he should be familiar with Chapter 1. Each training programme has its corresponding chapter in Part 1 dealing with the proper form for the event. Should an athlete *be training* for more than one event at a time, he should work out a programme that will contain practice in the various phases as indicated for the separate events but the combined programme should not be merely the addition of the programmes for the individual events.

**SYNOPSIS OF WEEKLY TRAINING
PROGRAMMES FOR THE
VARIOUS EVENTS**

100 YARDS DASH

Second Week of training

Monday. Jog quarter mile. Bending exercises and calisthenics on the ground for 10 minutes. Run 200 yards at $\frac{3}{4}$ speed paying attention to the arm position, body lean and full stride with the toes pointing straight ahead on each step.

Tuesday. Jog quarter mile. Calisthenics for 5 minutes including pedalling while lying on the back and running-in-place. Work on the start, taking about 10 starts and running out to 20 yards. Sprint 50 yards and take the time.

Wednesday. Jog quarter mile. Exercise to strengthen the muscles of the trunk for 5 minutes. Take 2 starts paying attention to the "drive" for the first 5 strides. Practice changing from the "build-up" to the relaxed position as explained in Chapter 1.

Thursday. Warm up slowly with jogging. Use the run-in-place exercise and the push up from the ground. Start from the mark 10 times working on the "drive" and a change into the "build-up" position. See Chapter 1 for specific instructions.

Friday. Jog just enough to get warmed up. While jogging pay attention to a smooth motion of arms with the stride.

Saturday. Jog quarter mile. Sprint 50 yards and have time taken. Use the "drive" for 10 yards, the "build-up" for the next 30, and the relaxed form for the final 10 yards. Rest 3 minutes. Sprint 75 yards against time, running the race the same as the 50 yard distance excepting the last 25 yards which will be run with the relaxed form.

Fifth Week of Training

Monday. Jog quarter mile. Rest 2 minutes. Run 300 yards at $\frac{1}{2}$ speed correcting the faults in your form as noticed in the past week. Do body exercises for 5 minutes. Run 100 yards at $\frac{3}{4}$ speed paying attention to the correction of the faults mentioned in the 300 yards run.

Tuesday. Warm up with jogging and running-in-place. Take 6 starts working for smoothness from the start to the 20 yard mark (make the change easily from the drive to the build-up.) Sprint 40 yards. Rest 3 minutes. Sprint 60 yards. Follow the directions of Chapter 1 in running these distances.

Wednesday. Jog quarter mile. Rest 5 minutes. Run 150 yards at $\frac{3}{4}$ speed. Change from "relaxed" to "build-up" position at least 3 times during the distance. Watch for the faults you were trying to correct Monday.

Thursday.—Warm up with baton passing

as explained in Chapter 12. Take 5 starts running out to the 20 yard mark.

Friday.—Rest (no training).

Saturday.—Race at the 100 yard distance. Warm up for the race by jogging quarter mile, some stretching exercise, work up to full speed and hold it for 20 yards.

Eighth Week of Training.

Monday.—Warm up with easy jogging. Go over faults discovered during the past week. Study your past races. Work at $\frac{1}{2}$ speed correcting those faults.

Tuesday.—Jog quarter mile. Work on the Finish as described in Chapter 1. Complete the day's training by making 5 good baton passes. Check your form against the instructions of Chapter 12.

Wednesday.—Rest (no training).

Thursday.—Warm up with baton passing. Take 3 starts, running out to 50 yards on the last one.

Friday.—Rest (no training).

Saturday.—Race at the 100 yard distance. Follow the same warm-up instructions given for the Fifth Week race. Finish this race with the form practised Tuesday.

220 YARDS DASH.

Second Week of Training.

Monday.—Jog quarter mile. Bending exercises and calisthenics for 10 minutes. Run 250 yards at $\frac{3}{4}$ speed paying attention to the arm position, body lean and full length strides.

Tuesday —Jog quarter mile. Calisthenics for 5 minutes including pedalling while lying on the back and running-in-place. Work on the start, taking about 10. Follow directions given in Chapter 1. Sprint 50 yards and take time for the distance.

Wednesday.—Jog quarter mile. Do exercises to strengthen body muscles. Practice changing from the "build-up" to the relaxed position and then practice the opposite change. Follow instructions for these changes given in Chapter 1.

Thursday.—Jog quarter mile. Start from the marks 10 times, and practice making the changes from the "drive" to the "build-up" and then to the "relaxed" position. See Chapter 1 for the description of the first 40 yards of a sprint race.

Friday.—Jog enough to get thoroughly warmed up, paying attention to smoothness of the arms and to the length of the stride.

Saturday.—Jog quarter mile. Sprint 50 yards using the same style as practiced

Thursday. Have time taken. Rest 5 minutes. Sprint 100 yards as though they were the first 100 of a 220 yard race. Follow Chapter 1 for detailed description.

Fifth Week of Training.

Monday.—Jog half mile. Pay attention during this time to the correction of faults discovered during the past week. Do body exercises for 5 minutes. Run 100 yards at $\frac{3}{4}$ speed working on the correction of faults.

Tuesday.—Jog quarter mile. Take 6 starts running out to the 20 yard mark on each and running this portion of the race as described in Chapter 1. Sprint 40 yards. Rest 3 minutes. Sprint 60 yards.

Wednesday.—Warm up thoroughly. Run quarter mile for time. Follow the instructions given in Chapter 2 for this race.

Thursday.—Warm up with baton passing as explained in Chapter 12.

Friday.—Rest (no training).

Saturday.—Race at the 220 yard distance. Warm up for the race by jogging quarter mile, doing some stretching exercises, then working up to full speed and holding it for 20 yards.

Eighth Week of Training.

Monday.—Warm up with plenty of easy jogging. Go over faults discovered dur-

ing the past week. Study your past races. Work at $\frac{1}{2}$ speed correcting those faults.

Tuesday.—Jog quarter mile. Work on "The Finish" as described in Chapter 1. Complete the day's training by doing 5 baton passes. See Chapter 12 for best form.

Wednesday.—Rest (no training).

Thursday.—Practice baton passing at easy speeds for warming up exercises. Take 3 starts. Sprint 50 yards for time.

Friday.—Rest (no training).

Saturday.—Race at the 220 yard distance. Warm up as instructed for the fifth week.

440 YARDS RUN.

Second Week of Training.

Monday.—Jog half mile. Spend 10 minutes on exercises including push-ups, pedalling from a reclining position, bending and running-in-place. Run 300 yards at $\frac{1}{2}$ speed working for a long smooth stride. Rest 5 minutes. Run 220 yards at $\frac{3}{4}$ speed working for a long stride.

Tuesday.—Jog quarter mile. Work on exercises and calisthenics for the body muscles for 5 minutes. Work at the start marks, running out to the 20 yard mark on 10 trials. Sprint 50 yards (take time for distance).

Wednesday.—Jog half mile. Do exercises to strengthen body muscles for 5 minutes. Practice changing from the "build-up" position as described in Chapter 1 to the "relaxed" position and back to the "build-up" position.

Thursday.—Warm up by jogging quarter mile. Work on exercises for 2 minutes. Start from the marks 5 times. The purpose is to learn to change from the "drive" to the "build-up" and then to the "relaxed" forms with smoothness and ease.

Friday.—Jog enough to get thoroughly warmed up. Pay attention to a long smooth stride.

Saturday.—Jog quarter mile. Sprint 50 yards and have time taken. Follow directions given in Chapter 1 for that portion of the 100 yard dash. Rest 5 minutes. Run 200 yards for time following the directions given for that portion of the 220 yard dash given in Chapter 1.

Fifth Week of Training.

Monday.—Jog half mile. Pay attention during this time to the correction of faults discovered during the past week. Do body exercises for 5 minutes. Run 220 yards at $\frac{3}{4}$ speed working on correction of faults.

Tuesday.—Jog quarter mile. Take 3 starts running out to the 50 yard mark and following the directions as given in Chapter 1. Work for smoothness. At the 50 yard mark the runner should be travelling at a high speed but with no signs of straining.

Wednesday.—Warm up by jogging. Sprint to top speed. Rest 2 minutes. Run half mile following directions for the race given in Chapter 2.

Thursday.—Jog quarter mile. Take a few starts paying attention to the change from the "drive" to the "build-up" position.

Friday.—Jog enough to get thoroughly warmed up, paying attention to a long smooth stride.

Saturday.—Race at the quarter mile distance. Warm up for the race by jogging a quarter mile, doing some stretching exercises, then slowly working up to top speed.

Eighth Week of Training.

Monday.—Jog half mile. Go over faults discovered during the past week. Study both your form throughout the race and the strategy used. Work at $\frac{1}{2}$ speed for 220 yards correcting these faults.

Tuesday.—Warm up by baton passing (sprint style) as described in Chapter 12. Work on the "The finish" as described in Chapter 1.

Wednesday.—Rest (no training).

Thursday.—Warm up by practising baton passing (distance style). Take about 8 starts running out to 20 yards on each.

Friday.—Rest (no training).

Saturday.—Race at the quarter mile distance. Warm up for the race as instructed for the Fifth Week.

HALF MILE RUN.

Second Week of Training.

Monday.—Jog $\frac{3}{4}$ Mile. Spend 10 minutes on exercises including push-ups, pedaling from a reclining position, bending and running-in-place. Run 300 yards at $\frac{1}{2}$ speed working for a long stride.

Tuesday.—Jog quarter mile. Exercises for stomach muscles for 5 minutes. Work at start marks. Follow instructions of Chapter 1 for the start. Sprint 50 yards.

Wednesday.—Jog quarter mile. Exercises for 5 minutes including shadow boxing. Run 220 yards for time, following directions of Chapter 1. Rest 5 minutes. Run quarter mile at $\frac{3}{4}$ speed.

Thursday.—Jog half mile. Work on baton passing (distance style). Work at start marks for 10 starts.

Friday.—Jog enough to get thoroughly warm. Pay attention to long smooth stride and relaxed body position.

Saturday.—Warm up by Jogging. Sprint 100 yards and have time taken. Rest 5 minutes. Run quarter mile at top speed following instructions for this distance as given in Chapter 2.

Fifth Week of Training.

Monday.—Jog a mile. Correct the faults of form found during the past week. Do arm exercises for 5 minutes.

Tuesday.—Warm up thoroughly by Jogging. Take 5 starts. Sprint 75 yards for time. Rest 5 minutes. Sprint 125 yards for time.

Wednesday.—Jog quarter mile. Do some baton passing. Run 660 yards with the first 440 yards 1 second faster than planned for the regular half mile race. Follow the directions of Chapter 2 for this race.

Thursday.—Warm up by plenty of baton passing. Work a short time on the finish for the sprint as given in Chapter 1. See Chapter 12 for directions in baton passing.

Friday.—Report for rub down. (Massage) No running.

Saturday.—Race at the half mile distance, following directions for the race as given in Chapter 2. Experiment for best first quarter mile pace.

Eighth Week of Training

Monday.—Jog one mile. Go over the faults of form and of strategy as evidenced the previous Saturday. Work out a program to correct these.

Tuesday.—Warm up with baton passing. Take 5 starts at the marks. Sprint 100 yards for time.

Wednesday.—Rest. No training.

Thursday.—Jog quarter mile to warm up. Run quarter mile one second faster

than the first quarter will be run on Saturday.

Friday.—Rest.

Saturday.—Race at the half mile distance. It is essential that the warming up prior to the race is thorough. See suggestions for Saturday's training, fifth week, quarter mile run.

THE MILE RUN

Second Week of Training

The training for the entire week should be identical with that for the half mile run.

Fifth Week of Training

Monday.—Jog $1\frac{1}{2}$ miles. Work for the correction in the form as evidenced in the previous race. Study errors in race strategy and correct them.

Tuesday.—Warm up thoroughly by Jogging. Take 5 starts. Sprint 100 yards for time. Rest 5 minutes. Sprint 100 yards for time.

Wednesday.—Jog quarter mile. Do some exercising including shadow boxing. Run half mile at a pace 1 second faster each quarter than will be used in the race.

Thursday.—Warm up with plenty of baton passing. Sprint 100 yards. Take $\frac{3}{4}$ mile at $\frac{3}{4}$ speed.

Friday.—Report for rub down. (Massage) No running.

Saturday.—Race a mile. Follow instructions of Chapter 3. Warm up for the race with quarter mile jog, some stretching, and a 50 yard sprint.

Eighth Week of Training

Monday.—Jog 2 miles. Go over the faults of form and strategy of last week's

race. Work out a program to correct them.

Tuesday.—Warm up thoroughly by baton passing. Take 5 starts. Sprint 220 yards for time running as directed in Chapter 1.

Wednesday.—Rest.

Thursday — Jog half mile. Do 5 minutes calisthenics including shadow boxing. Run quarter mile in 2 seconds faster than the first quarter of Saturday's race.

Friday.—Rest.

Saturday.—Warm up by jogging quarter mile, sprinting 50 yards. Run one mile using the pace worked out as your best during the previous weeks.

THE SHOT PUT

Second Week of Training

Monday.—Jog quarter mile. Warm up with easy puts, throwing some with the left hand. Work on the reverse from the set position. Smoothness and ease should be the objectives of this training. Spend 5 minutes on the hop, set and reverse without the shot. See Chapter 4 for directions for correct form.

Tuesday.—Warm up with some jogging and plenty of calisthenics, especially of the trunk and arm muscles. Work without the shot on speeding up the reverse and adding snap to the final arm throw. Make several puts from the set position. Finish by working on hop, set and reverse without the shot.

Wednesday.—Warm up by jogging. Take some easy puts starting with the hop. If these puts are smooth, try 6 puts for distance.

Thursday.—After warming up, work without shot for the correction of faults noticed Wednesday. Take several easy puts from the reverse position. Do not tire the arm, however.

Friday.—Jog quarter mile. Take plenty of calisthenics. No work with the shot.

Saturday.—After warming up thoroughly, take, 6 puts for distance.

Fifth Week of Training

Monday.—Work without shot on the correction of faults discovered the past week. Take a few easy puts from the reverse position and a few from the hop. Perfection of form should be the aim now.

Tuesday.—Warm up. Take a few puts for distance. Be sure that faults corrected Monday are still corrected. Work fairly hard in this training.

Wednesday.—Spend all training period in the gymnasium on the bars, with arm exercises, and in developing trunk muscles. Do not touch the shot.

Thursday.—Jog quarter mile. Do calisthenics for 10 minutes. Practice for rhythm and speed in the ring without shot.

Friday.—Rest.

Saturday.—Be sure that the heart is beating rapidly and that the body is warm before putting for distance.

Eighth Week of Training

Monday.—Work without shot for the correction of faults in the putting on last Saturday. Study the foot marks made to note where the best performances are occurring. Correct faults work easily with the shot.

Tuesday.—Warm up. Take a few puts but do not strain for distance. Be sure

that the form is smooth and easy and that faults are being eliminated.

Wednesday.—Spend the time in the gymnasium on calisthenics correcting the weakest parts of the body. Each man will have a different set of muscles to work on in this training period.

Thursday.—Rest.

Friday.—Rest.

Saturday.—Extra care in warming up and in taking the putting easily is a necessary caution after the easy training of the week. If the previous training has been right you should feel fit for hard puts.

THE DISCUS THROW

Second Week of Training

Monday.—Warm up by jogging a quarter mile. Throw easily from the set position. Work for smoothness in the reverse but do not attempt to make it fast. Work for smoothness and ease in throwing. Work on the whirl and reverse for 10 minutes without the discus. See Chapter 5 for directions.

Tuesday.—Warm up with calisthenics. Work on whirl without discus for speed. Throw several times from the set position speeding up the reverse somewhat. Take a few easy throws with whirl.

Wednesday.—Warm up easily with easy throws with the whirl. If these are smooth throw a few times for distance. Finish with 5 hard throws for distance from the set position.

Thursday.—Warm up. Correct faults noticed while trying for distance Wednesday. Take several easy throws with the whirl working for smoothness and balance. The set position is the most important phase of this weeks work. See Chapter 5.

Friday.—Jog quarter mile. Take exercises for trunk muscles. Do not touch the discus.

Saturday.—Warm up with plenty of jogging and exercising. Throw 10 times for distance.

Fifth Week of Training

Monday.—Warm up by jogging and exercising. Take a few easy throws with a slow whirl. Work for the correction of faults discovered in the previous week. Spend most of the time on the correction of those faults following the instructions of Chapter 5 closely. Finish with three throws for distance.

Tuesday.—Warm up thoroughly. Work on the reverse for increase in the arm snap particularly at the end of the throw. Take 6 throws for distance.

Wednesday.—Warm up with body exercises. Work without the discus on the whirl. Try to gain speed. Throw about 10 times, taking the whirl fast, coming to a good set position and throwing easily.

Thursday.—Jog quarter mile. Work 5 times on the whirl without the discus, both for speed and smoothness. Spend 15 minutes in the gymnasium on calisthenics.

Friday.—Rest.

Saturday.—Warm up by jogging and easy throwing. Sprint 30 yards about 3 minutes before competition starts.

Eighth Week of Training

Monday.—Warm up slowly with easy throwing. Go over the faults of last Saturday's throwing and study the form as outlined in Chapter 5. Work for the

correction of the faults. Smoothness and ease should be the aim of training during this week.

Tuesday.— Warm up in the same manner as prior to actual competition. Take 6 throws for distance. Work easily on the correction of faults as appeared in the previous hard throws.

Wednesday.— Rest.

Thursday.— Work 30 minutes in the gymnasium on trunk exercises. Practice a few whirls without the discus.

Friday.— Rest.

Saturday.— Warm up with jogging, easy throwing, and a bit of sprinting. Have good mental control before each trial. Put everything into each of the 6 throws allowed.

THE HIGH JUMP

Second Week of Training

Monday.—Jog quarter mile. Do plenty of kicking, bending, stretching to be sure that the body is thoroughly loosened. Set the bar 6" below best jumping height and take about 3 jumps for form. Take it easy and work for smoothness of the form set forth in Chapter 6. Then raise the bar 3" and jump 6 times at this height.

Tuesday.—Warm up by jogging and exercising. Set bar at same height as on Monday and work for smoothness in the form. Advance the bar an inch each trial cleared until the jumper has reached his best mark maintaining an easy jumping form.

Wednesday.—After warming up put the bar a foot below the best mark made Tuesday. Take a run of only 4 steps and jump. Work for co-ordination and perfect execution of the form. Advance the bar 6" and increase the run to 8 steps.

Thursday.—Jog quarter mile. Skip the rope for a short time. Work at the start marks following instructions of Chapter 1. Place bar 3" below maximum height and take 3 trials only.

Friday.—Some calisthenics and rope skipping. No jumping.

Saturday.—Warm up thoroughly. Jump in competition starting at a mark 9" below your best effort. Jog plenty before each trial.

Fifth Week of Training

Monday.—Jog quarter mile. Work at an easy height for the correction of faults discovered the previous week. Do considerable jumping but have perfecting of the form as the aim for the day.

Tuesday.—Warm up thoroughly with jogging, exercising. Do a few starts. Study the details of the jumping form. See Chapter 6. Do not jump to-day.

Wednesday. After warming up, jump for best mark starting at a height 6" below the best mark of the season.

Thursday.—Rest.

Friday.—Rest.

Saturday.—Start jumping in competition at 6" to 8" below best previous mark. Be careful to be warm before each trial. Relax completely between trials.

Eighth Week of Training.

Monday.—Work easily for the correction of faults in last Saturday's jumping. Study Chapter 6 for correct details.

Tuesday.—Plenty of rope skipping, exercising for arms and trunk. Work at the start marks. No jumping.

Wednesday.—Rest.

Thursday.—Spend 30 minutes in the gymnasium on tumbling and on body exercises. No jumping.

Friday.—Rest.

Saturday.—The warm-up period will need to be longer than usual this week. Supreme confidence and perfect mental control are big factors in jumping.

THE POLE VAULT.

Second Week of Training.

Monday.—Jog quarter mile. Check step on the runway carrying the pole. Take a very easy height and jump for perfect form. See Chapter 7 for directions. Advance the bar slightly but not enough to make clearance difficult. Pull pole up out of the box just before letting it go.

Tuesday.—Jog to warm up. Work at the start marks. Run 50 yards dash. Check step on the runway. Vault 10 times at a fairly easy mark for smoothness in the form. See that the feet shoot high above the bar.

Wednesday.—Jog enough to warm up. Check step on the runway. Vault a few times at a height greater than Tuesday. Keep the feet shooting up. Spend 15 minutes on the bars in the gymnasium.

Thursday.—Check step on the runway. Work for more speed in the run. Keep the take off smooth and shoot the feet as high as possible. See Chapter 7 for directions. Work 30 minutes in the gymnasium on horizontal bar and on tumbling.

Friday.—Work on the gymnasium on arm exercises, hand stands and push-ups. Take a short workout at the start marks. See Chapter 1.

Saturday.—Warm up by checking the step at the runway. Strive for a smooth easy vault on each trial. Take plenty of time in the pull-up and in the push-up during each vault.

Fifth Week of Training.

Monday.—Warm up by checking the runway. Sprint 50 yards for time, vault at an easy height for smoothness and the correction of faults discovered Saturday. See Chapter 7. Do not work too hard.

Tuesday.—Check step on the runway. Work for speed on the run and an easy take off from the ground. Work at a height that is easy. Try for style and perfect form in each vault. Finish with 15 minutes in the gymnasium.

Wednesday.—Spend 30 minutes in the gymnasium on tumbling, on the bars and in arm exercises. Take 5 starts at the marks. Sprint 75 yards for time. No vaulting.

Thursday. Check step at high speed on the runway. Take 6 vaults at about 1 foot below best mark. Smoothness is the aim. Hold onto the pole until the jack-knife (The coming down position above the rod) is well started.

Friday.—Rest.

Saturday.—Perfect step will be a big factor in the higher heights. Check the

step before the vaulting begins. Relax completely between trials.

Eighth Week of Training.

Monday.—Jog quarter mile. Work for the correction of faults discovered Saturday. Study Chapter 7. Work for about 45 minutes on fairly easy jumps.

Tuesday.—Warm up. Take 10 vaults each one at a slightly higher mark. Perfect form is the aim of the training. Finish by sprinting 50 yards.

Wednesday.—Spend 30 minutes in the gymnasium on exercises to strengthen the portion of the vault that seems the weakest. Finish the day by sprinting 100 yards for time.

Thursday.—Rest.

Friday.—Rest.

Saturday.—Be sure to check the step on the runway. Get thoroughly warm before the first trial. Do not try any heights lower than you can be reasonably sure to clear. Conserve your energy. The harder work comes at the higher heights.

THE LONG JUMP

Second Week of Training.

Monday.—Jog quarter mile. Work for the proper step on the runway. Jump for co-ordination and correct form but not for distance. See Chapter 8 for correct form. Finish by skipping rope for 5 minutes.

Tuesday.—Warm up by checking the marks on the runway. Use a low hurdle set 10 from the board to assist in getting height in the jump. Special attention should be given to proper shoulder actions.

Wednesday.—Warm up with jogging and rope skipping. Check step on the runway. Take about 3 jumps with full speed on the runway but with easy take-off. Smoothness of form is essential.

Thursday.—Work at the start marks. Sprint 50 yards for time. Rest. Sprint 50 yards for time. See Chapter 1 especially regarding the build-up. No jumping.

Friday.—Check step on runway. Skip rope. No jumping.

Saturday.—Warm up thoroughly. Check step on runway. If anyone of the first three trials is the best jump of the year, do not take the balance of the trials.

Fifth Week of Training.

Monday.—Jog quarter mile. Check step on the runway at high speed. At slow

speed jump a few times working on the correction of faults discovered Saturday. Study Chapter 8.

Tuesday.—Work at the start marks. Sprint 75 yards for time. Rest. Skip rope. Check step on runway. Take 2 jumps for distance.

Thursday.—Work on 5 easy jumps stressing the portion of the form that seems to be the weakest. Do some rope skipping and some calisthenics for arms and body.

Thursday.—Warm up by easy jogging. Take a good rubdown.

Friday.—Rest.

Saturday.—The first necessity of good jumping is a perfect step for the runway. Have it right before the trials start.

Eighth Week of Training.

Monday.—Jog quarter mile. Work for the correction of faults noticed on last Saturday. Make this an easy workout and do not tire the legs.

Tuesday.—Rest.

Wednesday.—Some rope skipping and calisthenics for the body. Work at the start marks. No jumping. Sprint 75 yards.

Thursday.—Check the step on the runway after warming up. No jumping. Get a good rubdown. (Massage).

Friday.—Rest.

Saturday.—Be completely prepared for the first trial concerning correct step, loose muscles and rapid heart action.

THE HOP STEP AND JUMP.

Second Week of Training.

Monday.—Jog quarter mile. Work for proper step on the runway. See Chapter 8. Take a few trials to get proper balance. Skip rope for 5 minutes. Take a few starts. See Chapter 9 for correct form.

Tuesday.—Warm up by checking step on the runway. Work on the long jump as directed in Chapter 8.

Wednesday.—Warm up by checking step on the runway. Take 6 easy trials working for smoothness. See Chapter 9 for directions as to correct form. Work some at the start marks. See Chapter 1 for build up phase.

Thursday.—Warm up by sprinting and rope skipping. Sprint 75 yards for time. Work 15 minutes in gymnasium for body exercises.

Friday.—Check step on the runway. No jumping.

Saturday.—After proper warming up, take 6 trials for distance. Measure separately the length of the hop, and jump.

Fifth Week of Training.

Monday.—Check step at the runway. Take easy jumps working for the correction of faults noticed Saturday. Work to strengthen the portion of the jump that

seems weakest. Make the workout rather long but not strenuous.

Tuesday.—After checking step, work on the hop. Use good speed on runway, as long a hop as possible and then run. The object is to maintain as much of the runway speed as possible at the end of the hop.

Wednesday.—Skip rope to warm up. Take 5 long jumps as directed in Chapter 8.

Thursday.—Study Chapter 9. Spend 15 minutes in the gymnasium on body exercises. No jumping.

Friday.—Rest.

Saturday.—Warm by jogging, sprinting and checking step on the runway. Conserve energy between trials. When any trial breaks previous individual record quit for the day.

Eighth Week for Training.

Monday.—Jog quarter mile. Study the trials of last Saturday for faults in the form. Work for their correction.

Tuesday.—Warm up by jogging. Take 5 starts. Sprint 50 yards. Rest. Sprint 50 yards.

Wednesday.—Rest.

Thursday.—Work for 30 minutes in the gymnasium on arm and body exercises. Get a good rubdown. (Massage).

Friday.—Rest.

Saturday.—Be properly prepared for each trial. 6 efforts are all for the days work so do the best on each one.

THE LOW HURDLES.

Second Week of Training.

Monday.—Jog quarter mile. Do 10 minutes of calisthenics. Work over 1 hurdle for body balance and for proper leg swings. See Chapter 11 for instructions.

Tuesday.—Jog quarter mile. Work at start marks—see Chapter 1 for instructions on start and on sprinting 100 yards. Use first hurdle in position and work for proper step to this hurdle.

Wednesday.—Jog quarter mile. Work over 1 hurdle for left arm motion and for down sweep of right leg. See Chapter 11. Strive for good balance going over the hurdle. Run quarter mile at $\frac{3}{4}$ speed.

Thursday.—Jog quarter mile. Do 10 minutes calisthenics. Use first hurdles in position and work for step between them 7 steps is the aim of this practice. Check carefully on the action of the left leg in this workout.

Friday.—Warm up. Work on start for 5 minutes.

Saturday.—Warm up thoroughly, Use 3 hurdles in position and race 100 yards for time. Rest. Sprint 100 yards for time, no hurdles—see Chapter 1 for directions.

Fifth Week of Training.

Monday.—Jog quarter mile. Do 5 minutes of calisthenics. Use 2 hurdles in position

Fifth Week of Training.

Monday.—Jog quarter mile. Spend 5 minutes on stretching and bending. Take 1 hurdle and correct the faults noticed in the past week. Work for smoothness over the hurdle. Use 3 hurdles and see if the faults have been worked out.

Tuesday.—Warm up as usual. Work at start marks. Sprint 100 yards for time with 2 hurdles in position. Rest. Sprint 70 yards with 3 hurdles in position.

Wednesday.—Warm up by jogging quarter mile and stretching. Use 2 hurdles and run over them fast. If form is good, run 70 yards—5 flights—for time. If not, work to correct observed faults.

Thursday.—Spend 10 minutes on arms and leg exercises. Special attention should be paid to the swing of the left leg. Sprint 75 yards for time.

Friday.—Rest.

Saturday.—Warm up by jogging quarter mile—stretching—bending—and trying 2 hurdles twice—and taking 1 start.

Eighth Week of Training.

Monday.—Warm up by jogging quarter mile and stretching. Take one hurdle and work for the correction of faults noticed in last Saturday's race.

Tuesday.—Jog quarter mile. Work at

5 starts. Race 175 yards for time.

Wednesday.—Do 10 minutes exercising and stretching. Use 2 hurdles and work for smoothness from start marks over the hurdles. Work on Finish as given in Chapter 1.

Thursday.—Study the action of the right arm in Chapter 10. Take 1 hurdle and practice on this arm.

Friday.—Rest.

Saturday.—After warming up properly, race at top speed through the flight but do not allow yourself to be excited by anything or be detracted by competitors, perfect mental control is essential to good hurdling.

THE HIGH HURDLES.

Second Week of Training.

Monday.—Jog quarter mile. Spend 5 minutes on stretching and bending exercises. Work with 1 hurdle only for form. Stress the proper placement of the front foot and front arm. See Chapter 10 for directions.

Tuesday.—Jog quarter mile. Do plenty of stretching and leg exercises. Work at start marks. Sprint 30 yards. Come out of marks and over first hurdle. Stress proper form. Spend time on right foot and left arm.

Wednesday.—Jog quarter mile. Do plenty of stretching. Come out of marks over 2 hurdles. See that the arm motion is smooth and continuous. See notes in Chapter 10 to avoid developing bad habits.

Thursday.—Jog quarter mile. Work for form over 1 hurdle. Pay attention to proper body lean and to proper position of the back leg. Finish with a 120 yard sprint.

Friday.—Warm up thoroughly with exercising and stretching. No hurdling.

Saturday.—Warm up thoroughly. Race 70 yards—5 flights for time. Rest. Race 70 yards with only 3 hurdles for time.

and work for step and for body balance. Do not attempt too much speed, but work on arm action.

Tuesday.—Warm up by exercising. Work out of start marks and over last hurdle. Work for snap over the hurdle and drive away from it. Finish the days training by running a 4 hurdle 100 yards dash.

Wednesday.—Jog quarter mile. Work over 1 hurdle for smoothness of form. Guard against any tendency to float in the air. Run 330 yards for time. See instructions for 220 yard dash in Chapter 1.

Thursday. Warm up with calisthenics. Work at start marks and over 1 hurdle. Concentrate on getting in fast drive after crossing the hurdle.

Friday.—Rest.

Saturday.—Jog quarter mile. Sprint 50 yards. Try 1 hurdle from the marks. Run the full 220 yards distance—10 hurdles.

Eighth Week of Training.

Monday.—Jog quarter mile. Work on body exercises for 10 minutes. Work over 1 hurdle for the correction of faults noted last week. See Chapter 11.

Tuesday.—Warm up thoroughly. Sprint 50 yards for time. Rest 5 minutes. Use two hurdles and sprint 50 yards distance for time. The time for the second trial

should be within four-fifths of a second of the first trial with hurdles.

Wednesday.—Use hurdles in position for smoothness and step at slow speed. Finish day's training by running 400 yards at nearly top speed.

Thursday.—Rest.

Friday.—15 minutes of calisthenics and good rub down. (Massage).

Saturday.—To warm up, jog quarter mile; work over 2 hurdles once; and sprint 30 yards. By this time in the training the low hurdles should be a fairly well executed race so far as form is concerned.

THE JAVELIN THROW.

Second Week of Training.

Monday.—Jog quarter mile. Work for smoothness in the reverse from the set position. Do not try for distance. Work without the javelin on the run and reverse. See Chapter 13.

Tuesday.—Warm up with 10 minutes calisthenics. Take a few easy throws combining run and the reverse. If the form is fairly smooth take 3 throws for distance.

Wednesday.—Warm up by working on the run and reverse without the javelin. Take a few easy throws from the set position for smoothness and finish with 3 throws for distance.

Thursday.—Rest.

Friday.—Work without the javelin on the reverse. Try to speed up the foot work without destroyed balance. Do not use the javelin.

Saturday.—Throw for distance (not more than 6 throws). Warm up for the competition with plenty of jogging and exercising.

Fifth Week of Training.

Monday.—Jog quarter mile. Work for smoothness and the correction of faults noted the previous week. See Chapter 13.

Tuesday.—Warm up with 10 minutes calisthenics. Take 3 throws for distance and note whether the faults supposedly corrected Monday were actually corrected.

Wednesday.—Rest.

Thursday.—Work without the javelin for speed and smoothness in the footwork of the run and reverse.

Friday.—Rest.

Saturday.—Be careful in warming up to do so gradually and to have the arm and body loosened before attempting competitive throws.

Eighth Week of Training.

Monday.—Work on the correction of faults discovered the previous week. Study Chapter 13. Do not attempt to throw for distance but correct the form for smoothness.

Tuesday.—Very easy workout striving for smoothness and ease in the delivery of the javelin. Work in the gymnasium for 15 minutes on body exercises.

Wednesday.—Work at the start marks on sprint work for 15 minutes. Do not touch the javelin.

Thursday.—Rest.

Friday.—Rest.

Saturday.—Observe caution in properly warming up before attempting hard

throws. If any throw should be far enough to win, use the remaining throws in working for perfect form and do not strain the arm on an attempt to throw hard.

TRAINING.

The word training has come to have more than one meaning. However, the outstanding meaning is that given to the training that is done on the field in preparing for the events. Part II of the book deals with this part of the training. There is however in training for athletics three other very important divisions: eating, sleeping and mental attitudes. Each of these four parts are important for the best performance in competition and none may be neglected.

Eating.

Each athlete will find that certain foods are disagreeable to him either in taste or in after effects. Avoid such foods. The main thing is to eat plain nourishing foods in moderate quantities, and the problem of eating will never be a serious one.

The problem is not so much what will a vegetarian and a non-vegetarian eat, but when and how much shall he eat. The common food of every country is the food for athletes.

Curries.—Well done and not too highly spiced.

Steaks and well done roasts.

Potatoes.—Baked ones are best. Potato chips. Boiled potatoes.

Rice.—Avoid using too much so as to overload the stomach.

Bread.—Double-roti (Bread) toast—well done, chappaties—never more than 3 puris at a meal.

Vegetables.—One each meal to the taste of the athlete.

Fruits.—Fruits of all kinds, but in small quantities, and only at the regular meal time.

Desserts.—Fruits, ice-cream, sweets, in small amounts and only at meal time. All heavy pastries and cakes should be avoided and never taken except at meals.

Drinking.—Drink plenty of milk, but only at meal times. Tea, coffee, cocoa, ovaltine, have no objections but should be taken very moderately. Many athletes think that on the field to eat an orange or drink a bottle of soda water after a run is refreshing. This habit is very harmful and should be given up entirely. Secure some water and wash the mouth out well but do not swallow the water. Such a practice will be just as refreshing and it will not have the evil effects on the stomach and the body as a whole.

Over-Eating.—Over-eating is the worst (and probably the most common) fault discovered in an athlete's training programme. Be moderate. Keep the quantity small, and the amount at each meal about the

same in quantity. If the amount is kept small, the kind of food will not become a problem. When in doubt about your food consult a doctor, or a reliable physical education director.

Sleeping.—A *regular* time for retiring and a *regular* time for rising are the most important facts to establish with reference to sleeping. Seven to nine hours are required for most athletes. Get plenty of sound sleep, but be *regular* in your sleeping hours. Remember that late hours one night in a week will undo the good effects of a week's hard training, just as one punch at a looking glass will break it even though it took weeks to make it. Securing abounding health is not so difficult for athletes to get, it is the keeping of it that is the difficult thing.

Mental Attitudes.

The disposition of the athlete materially affects the result of his training. A few proper attitudes are suggested, all pointing to the best results in training.

1. The realization that athletics are sport, and that the best sport is had when each does his best, win or lose. It takes definite mental control and belief to enjoy athletics when you have done your best, win or lose.
2. Confidence in yourself—Do your best and let it go at that. Study your

events, study your own ability, know both the event and yourself well. Both build confidence that you will do your best.

3. A burning desire to improve yourself — be always ready to learn how to do your event with new methods.
4. A true love of the event in which you are competing. Aim at the world record in that event.
5. A happy smile for all other contestants. A real desire that they too may do their best.

The 1932 Olympic Games at Los Angeles, demonstrated the mental attitudes developed in various countries due to their training programmes. Japan was remarkable in the dogged tenacity displayed by each and every one of their men and women regardless of the circumstances under which they were competing. They had definitely trained themselves never to give up and they had trained themselves well. The physical stamina of the Finnish runners amazed the world. One mile, three miles, 6 miles, 26 miles and energy left. The year-round programme of training in Finland showed itself in a very convincing fashion. The confidence of the American athletes was displayed in all events. They knew the scientific method, they had tested the methods out, they knew their own ability and ran many of the races as if they were

running alone and enjoying it. They knew their best and they were confident that on the day of competition they could give of their best. The mental attitude which you as an athlete take toward your training will determine the kind of competitor you will be when the day for your big test comes. The results on the day of competition is the result of your training. Failure to concentrate on the doing of the little things necessary for good sound training will show up in poor results on the day of the meet.

Field Training.

Eating, sleeping and mental conditions are preparing the athlete so that he can get the greatest results from his field training. Each part of the training programme influences every other part. Do the best you can in all lines of training and the result will be satisfactory.

For the best results in field training make a close analysis of your event in Part I and follow the field training programme for that event in Part II, paying close attention to the instructions. The results can be very good but that depends on the mental attitude of the athlete.